1. A method of planarizing a semiconductor wafer, said method including:

supporting a back-side surface of said wafer with a wafer support subcarrier;

applying a polishing force against said support subcarrier to press a front surface of said wafer against a polishing pad;

disposing a retaining ring that defines a chamfered outer edge about a portion of said wafer support subcarrier and said wafer so as to restrain movement of said wafer from said support subcarrier during polishing, said chamfered outer edge including a transition region between a first surface substantially parallel to said pad and a fourth surface substantially perpendicular to said pad, said transition region presenting a second surface at a first angle relative to a said first surface and a third surface at a second angle relative to said fourth surface; and

applying a pad conditioning force against said retaining ring to press a front surface of said retaining ring against said polishing pad.

2. The method in Claim 1, wherein said pad conditioning force is applied independently of said polishing force.

3. The method in Claim 1, wherein said pad conditioning force is coupled to said polishing force.

4. An article of manufacture comprising a semiconductor wafer polished according to the method of Claim 1.

5. An article of manufacture comprising a semiconductor wafer planarized according to the method of Claim 1.

6. A method of polishing a substrate said method including:

supporting a back-side surface of said substrate with a wafer support subcarrier;

applying a polishing force against said support subcarrier to press a front surface of said substrate against a polishing pad;

disposing a retaining ring that defines a chamfered outer edge about a portion of said wafer support subcarrier and said wafer so as to restrain movement of said wafer from said support subcarrier during polishing, said chamfered outer edge including a transition region between a first surface substantially parallel to said pad and a fourth surface substantially perpendicular to said pad, said transition region presenting a second surface at a first angle relative to a said first surface and a third surface at a second angle relative to said fourth surface; and

said retaining ring having a thickness of 0.25 inches, one of the portions at the lower surface of the retaining ring extending upward from the parallel portion a distance of 0.034 inches, and the other portion extending upward 0.060 inches before meeting the orthogonal retaining ring surface; and applying a pad conditioning force against said retaining ring to press a front surface of said retaining ring against said polishing pad.

7. The method in Claim 6, wherein said pad conditioning force is applied independently of said polishing force.

8. The method in Claim 7, wherein said pad conditioning force is coupled to said polishing force.

9. An article of manufacture comprising a semiconductor wafer polished according to the method of Claim 6.

10. The method of Claim 6 wherein said substrate comprises a semiconductor wafer.

11. The method of Claim 6 wherein said substrate comprises a glass substrate.

12. The method of Claim 6 wherein said polishing planarizes said substrate.

13. A method according to claim 1, wherein the pad conditioning force to said retaining ring is applied such that a component of said pad conditioning force is communicated to said polishing pad at an angle non-orthogonal to said pad and so the pad conditioning force applied to said pad transitions to increase the orthogonal component of the force at a leading edge of said retaining ring just prior to that portion of said pad contacting said wafer and to decrease the orthogonal component to expand of the region over which said pad is flat when that portion of the retaining ring is contacting a trailing edge portion of said wafer in accordance with said first, second, third, and fourth surfaces.

14. A method according to claim 1, wherein said first and second angles are each 20±4 degrees.

15. A method according to claim 6, wherein the pad conditioning force to said retaining ring is applied such that a component of said pad conditioning force is communicated to said polishing pad at an angle non-orthogonal to said pad and so the pad conditioning force applied to said pad transitions to increase the orthogonal component of the force at a leading edge of said retaining ring just prior to that portion of said pad contacting said wafer and to decrease the orthogonal component

to expand of the region over which said pad is flat when that portion of the retaining ring is contacting a trailing edge portion of said wafer in accordance with said first, second, third, and fourth surfaces.

16. A method according to claim 6, wherein said first and second angles are each 20±4 degrees.

17. A method of planarizing a semiconductor wafer, said method including:

supporting a back-side surface of said wafer with a wafer support subcarrier;

applying a polishing force against said support subcarrier to press a front surface of said wafer against a polishing pad;

disposing a retaining ring that defines a chamfered outer edge about a portion of said wafer support subcarrier and said wafer so as to restrain movement of said wafer from said support subcarrier during polishing, said chamfered outer edge including a transition region between a first surface substantially parallel to said pad and a fourth surface substantially perpendicular to said pad, said transition region presenting a second surface at an angle of 20±4 degrees relative to a said first surface and a third surface at an angle of 20±4 degrees relative to said fourth surface;

applying a pad conditioning force to said retaining ring to urge a front surface thereof against said polishing pad such that a component of said pad conditioning force is communicated to said polishing pad at an angle non-orthogonal to said pad and so the pad conditioning force applied to said pad transitions to increase the orthogonal component of the force at a leading edge of said retaining ring just prior to that portion of said pad contacting said wafer and to decrease the orthogonal component to expand of the region over which said pad is flat when that portion of the retaining ring is contacting a trailing edge portion of said wafer in accordance with said first, second, third, and fourth surfaces.

18. A method of planarizing a semiconductor wafer according to claim 17, wherein said retaining ring has a thickness of 0.25 inches, one of the portions at the lower surface of the retaining ring extending upward from the parallel portion a distance of 0.034 inches, and the other portion extending upward 0.060 inches before meeting the orthogonal retaining ring surface.

19. An article of manufacture comprising a semiconductor wafer planarized according to the method of claim 18.